

DEPARTMENT OF COMMERCE

National Telecommunications and Information Administration

Docket No: 120928505-2505-01 **RIN:** 0660-XC002

Development of the Nationwide Interoperable Public Safety Broadband Network

Notice of Inquiry

COMMENTS OF THE STATE OF NEW MEXICO

THE STATE OF NEW MEXICO (“SONM”) provides these comments in response to the above-referenced Notice of Inquiry (“NOI”)¹ that was issued by the National Telecommunications and Information Administration (NTIA) on behalf of the First Responder Network Authority (“FirstNet”). The NOI seeks comments on the conceptual network architecture presentation entitled, “FirstNet Nationwide Network (FNN) Proposal,” made at the FirstNet Board of Directors meeting on September 25, 2012, and invites input on network design and business plan considerations.

INTRODUCTION

SONM strongly supports the goals of the FNN concept, specifically, achieving ubiquitous, reliable, interoperable, low cost coverage for public safety users within an accelerated timeframe. The proposed architecture raises technical, operational and business issues that will need to be resolved in order for the FirstNet vision to achieve success, particularly in rural areas. The implementing statute² establishes a strong framework for resolving these issues, providing for extensive and ongoing consultation with States with regard to developing, constructing, managing, maintaining and operating the Radio Access Network.³

¹ 77 Fed. Reg. 60680 (October 4, 2012).

² The Middle Class Tax Relief and Job Creation Act of 2012 (the “Act”).

³ Section 6202 (b)(2)(B) of the Act.

As Congress understood, one size does not fit all for purposes of building out a nationwide public safety network, particularly in hard-to-cover rural states such as New Mexico. Accordingly, the Act sets up a framework that allows for the individualized needs of State, local and Tribal users to be met, taking advantage of available partnering opportunities and existing assets that may exist on a local, state, regional and/or nationwide basis, while achieving ubiquitous, interoperable, public safety grade coverage.

As an Early Builder and 700 MHz broadband waiver recipient, SONM has been actively involved for several years in efforts to build out the nationwide public safety broadband network. SONM is one of six jurisdictions that were awarded BTOP funding by NTIA to support the 700 MHz public safety broadband buildout. SONM looks forward to working with FirstNet as these efforts continue, particularly with regard to planning and building out the New Mexico portion of the nationwide network. In this regard, SONM's BTOP grant project present an immediate opportunity to move forward with completing a partial network buildout in New Mexico that can serve as a test-bed for operational models in a rural state, and be an integral part of the nationwide network.

SONM is part of the Early Builders Advisory Council (EBAC) and participated in the preparation of the EBAC comments. SONM generally supports the EBAC comments and many of SONM's concerns are addressed in the EBAC comments. In addition, SONM supplements the record of the proceeding with the following:

1. SONM Has a Strong Interest in this Proceeding

The State of New Mexico, known as the "Land of Enchantment," is rich in its history and diverse in its culture and geography, with significant Native American and Hispanic populations. SONM encompasses a large geographic area of 121,655 square miles with a population of just

under two million. Accordingly, while New Mexico has urban areas, including Albuquerque and the capital of Santa Fe, it is one of the least densely populated states in the nation, with fewer than twenty persons per square mile.

The landscape of New Mexico ranges from wide, rose-colored deserts to broken mesas to high, snow-capped mountain peaks. Although the State is known for its arid climate, much of New Mexico is covered by heavily forested mountain wilderness, especially in the northern parts of the State. The Sangre de Cristo Mountains, the southernmost part of the Rocky Mountains, run roughly north-south along the east side of the Rio Grande River in the rugged pastoral north. As part of its natural beauty there are millions of acres of national forests located within the State, including Carson National Forest, Cibola National Forest, Lincoln National Forest, and Santa Fe national Forest.

The State is bordered by Mexico to the South, with some population centers such as Las Cruces located near the Mexican border. As a border state, SONM contends with issues of immigration and drug crime that have significant local and national effect. The State is home to numerous Native American Tribes, whose lands cover vast geographic portions of the State. SONM is also home to numerous Federal installations, including military bases and the Los Alamos National Laboratory.

The vast array of differing topographies on the one hand, with remote wildernesses and very low population density, combined with the concerns of protecting and securing the border and Federal installations, and serving national parks, Tribal lands and all citizens of the State, present significant and unique needs and challenges to public safety communications. Because New Mexico is one of the least densely populated states in the nation, commercial providers face significant economic challenges in serving the rural areas of the State. As a result, government

involvement is essential to the buildout and deployment of a 700 MHz broadband public safety system to meet the critical needs of public safety users in urban areas as well as rural areas.

2. FirstNet Should Leverage Existing BTOP Grant Funding

Recognizing that rural, low population areas such as exist in most of New Mexico are generally the last places in which new communications technologies are built out, SONM applied for and obtained a waiver from the FCC allowing SONM to proceed with early buildout of the New Mexico portion of the national 700 MHz public safety broadband network. In granting waivers to New Mexico and 20 other jurisdictions, the FCC recognized that significant information could be learned from these early builder projects that would assist in efforts to build the national network. In order to fund its mobile broadband project, New Mexico applied for and was awarded a \$38 million BTOP grant from NTIA. The BTOP grant included a 700 MHz LTE last mile component, and also a middle mile component that upgrades SONM's state-wide tower microwave communications transport network of approximately 100 towers that is used to backhaul public safety communications throughout the State. The middle mile project was intended, in part, to prepare the State's microwave communications transport network to function as a backhaul pipeline for SONM's public safety LTE deployment.

Shortly after Congress' passage of the Act establishing FirstNet, SONM worked with NTIA to put in place a temporary suspension of equipment purchases and network deployment for the last-mile LTE portion of SONM's BTOP project, pending establishment of FirstNet. Thus, while the middle mile transport portion of the project has proceeded and is nearing completion, the LTE portion has been temporarily held in partial abeyance with a view to ensuring that LTE equipment purchasers would be compatible with the FirstNet architecture.

SONM anticipated that once FirstNet was established, FirstNet, SONM and NTIA would work together to move the LTE project forward.

SONM encourages FirstNet to allow the New Mexico LTE project to move forward in a manner that will balance the State's near-term public safety needs with prudent management of public resources. The available BTOP funding constitutes a significant amount of money that can be invested towards LTE deployment within New Mexico that will result in benefits not only to the State but to the national network.

Completion of the New Mexico BTOP project will have significant benefits for FirstNet. As discussed above, network buildout within New Mexico presents significant demands on public safety communications resulting from border security issues, Federal installations, Native American Tribes, vast rural areas and varying topography, combined with a dearth of commercial alternatives. The project will help to define and test working governance, funding, asset sharing, partnering and business models for buildout in a rural state.

Accordingly, SONM urges FirstNet and NTIA to take actions to lift the temporary suspension.

3. In Defining the RAN Architecture, FirstNet Should Work Closely With States

The Act provides that the network components must include a core network and a radio access network (RAN).⁴ The Act defines the RAN as consisting “of all cell site equipment, antennas, and backhaul equipment, based on commercial standards, that are required to enable wireless communications with devices using the public safety broadband spectrum.”⁵ The Act also mandates that the RAN, “shall be developed, constructed, managed, maintained, and operated taking into account the plans developed in the State, local, and tribal planning and

⁴ Section 6202 (b).

⁵ Section 6202 (b)(2)(A).

implementation grant program under section 6302(a).”⁶ Thus, Congress expects FirstNet to work closely with the States in developing, building and operating the RAN architecture, with a view to ensuring that the FNN architecture will fully address state, local and tribal needs and input.

Accordingly, in moving forward to complete the details and specifics of, and to implement the RAN architecture under the FNN proposal, FirstNet needs to work closely with the States. The first step in that process is to develop planning information from the States through the state and local planning grant program.⁷ Input from the States should be obtained with regard to the availability of network assets for sharing with and use by FirstNet, including not only national commercial mobile carrier assets, but also assets owned by smaller local and regional carriers, public utilities, electric cooperatives, and governmental jurisdictions. The States should also be consulted on partnering and sharing opportunities to ensure that the most efficient and beneficial partnerships are entered for each local, state and regional area. Additionally, states need to be consulted on network usage, priority, security and reliability issues, to ensure that in each area of the country network assets are designed and managed in a manner that will best meet the various needs of public safety in the respective areas.

4. FirstNet Should Prioritize Rural Buildout

The Act mandates that FirstNet must ensure rural coverage on a substantially equal basis with urban coverage. The Act specifically provides,

In carrying out the duties and responsibilities of this subsection, including issuing requests for proposals, the nationwide, interoperable public safety broadband network, consistent with the license granted under section 6201, shall require deployment phases with substantial rural coverage milestones as part of each phase of the construction and deployment of the network. To the maximum

⁶ Section 6202 (b)(2)(B).

⁷ Section 6302(a) of the Act.

extent economically desirable, such proposals shall include partnerships with existing commercial mobile providers to utilize cost-effective opportunities to speed deployment in rural areas.⁸

This strong emphasis on rural buildout is critical to the success of achieving a nationwide interoperable public safety broadband network. As recognized by Mr. F. Craig Farrill during his presentation to FirstNet on September 25, 2012, the vast majority of the geography of this nation is rural. While the majority of citizens live in urban settings and populous areas, a very large number of public safety agencies function and provide service in rural settings.

It is in rural areas where network buildout is most problematic. In general, due to the economics of mobile communications buildout and usage, the national commercial operators have built and operate far fewer network assets and resources in rural areas as compared to urban areas, even though most of the nation on a geographical basis is rural. Accordingly, reliance on one or more national carrier partnering relationships to achieve buildout will be an incomplete solution in rural areas. Special attention and creative thought will be required to identify pragmatic and efficient partnering and sharing opportunities to complete rural network buildout.

The FNN proposal appropriately recognizes the need for a strong emphasis on rural coverage. The proposal suggests that in rural areas the FNN seek partnering arrangements with rural telecom providers, rural electric companies and cooperatives, mobile satellite providers, and state and local government operated networks. Thus, the FNN recognizes that partnering with one or more national commercial operators will not be sufficient in rural areas and accordingly proposes to rely on an array of varying diverse array of partnering opportunities that will differ from state to state, as well as within each state on a county and local level. For this reason, to ensure the successful entry of efficient, economic and beneficial partnerships in rural

⁸ Section 6206 (b)(3) of the Act.

areas, it is critically important that FirstNet work closely with rural states such as New Mexico to identify opportunities for partnerships. A major benefit of allowing New Mexico to move forward with its BTOP funded LTE deployment will be useful near-term experience regarding how to identify and implement successful partnering opportunities in a rural state such as New Mexico.

Finally, the FNN proposal emphasizes the benefits of a multi-band, multi-spectrum LTE user device. New Mexico supports this concept as a worthy goal. To achieve such a device, technical issues will need to be overcome concerning the number of different bands and frequency classes that will be required in such a device. With the multi-carrier architecture being proposed, the device would need to include, at a minimum, 700 MHz band-class 14, several separate bands (or bandclasses) for each national carrier partner (to accommodate coverage under each of their separate 4G, 3G and 2G networks), as well as any additional bands used by any separate regional or rural carrier partners to ensure that rural states will not be short-changed by the adoption of such devices.

New Mexico is committed to working with NTIA and FirstNet in pursuing real world solutions and operational experience designed to aid FirstNet in its long-term goals for development of a public safety broadband network that will serve the entire nation, including its rural, border and tribal areas.

CONCLUSION

The State of New Mexico appreciates the opportunity to submit these comments and looks forward to continuing its work in support of the national public safety broadband network in close cooperation with FirstNet and NTIA.

Respectfully submitted,

STATE OF NEW MEXICO

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